

AMENDMENTS TO THE CLAIMS**Claims 1-28 (cancelled)**

Claim 29 (currently amended): ~~1.-~~A method for generating extreme ultraviolet (EUV) or ~~soft X-ray~~ soft X-ray radiation comprising the steps of:

generating and heating a plasma in a hybrid manner by the combination of a laser radiation produced by a laser source which is focused to intensities beyond 10^6W/cm^2 onto a target and of an electric discharge produced by electrodes combined with means for producing a rapid electric discharge; and
providing that the time constant of the laser produced plasma expansion time exceeds the characteristic time constant of the discharge.

Claim 30 (currently amended): ~~[[A]]~~ The method according to claim 29, Claim 29;

wherein the target is a gaseous, liquid, liquid spray, cluster spray or solid medium, such as a bulk or foil target, more than 10^{19} atoms/cm³.

Claim 31 (currently amended): ~~[[A]]~~ The method according to claim 29, Claim 29;

wherein a EUV plasma is first produced by the laser radiation focused on a dense target in a laser interaction zone, and subsequently a discharge is induced across the laser interaction zone thereby boosting the initial laser produced plasma and enhancing total EUV light production.

Claim 32 (currently amended): ~~[[A]]~~ The method according to claim 29, Claim 29;

wherein a cold plasma is generated by the laser radiation focused on the target to produce a cold plasma plume, and a discharge is then actively triggered in a ~~delocalised~~ delocalised

delocalized interaction zone of the plasma plume to heat and compress the plasma for more confined EUV light emission.

Claim 33 (currently amended): ~~[[A]] The method according to claim 29, Claim 29;~~

wherein an EUV plasma is first produced by use of a conventional electrical discharge configuration, and subsequently, during a pinch process of the discharge when the plasma becomes sufficiently dense, laser radiation is focused on that high density discharge plasma thereby boosting the initial discharge produced plasma and enhancing the EUV light production.

Claim 34 (currently amended): ~~[[A]] The method according to claim 29, Claim 29;~~

wherein the current pulses that are applied in the presence of plasma by the electrodes are provided by the rapid discharge of capacity stored energy.

Claim 35 (currently amended): ~~[[A]] The method according to claim 29, Claim 29;~~

wherein the current pulses that are applied in the presence of plasma by the electrodes are selected with a period within a one-to-three digit nanosecond range.

Claim 36 (currently amended): ~~[[A]] The method according to claim 29, Claim 29;~~

wherein the current pulses that are applied in the presence of plasma by the electrodes are selected with amplitudes in a two-to-three digit kilo-ampere range.

Claim 37 (currently amended): ~~[[A]] The method according to claim 29, Claim 29;~~

wherein the current pulses that are applied in the presence of plasma by the electrodes are switched in a defined temporal relation with the firing of the laser pulses produced by the laser source.

Claim 38 (currently amended): ~~[[A]] The method according to ~~claim 29~~, Claim 29~~;
wherein the plasma produced has a temperature in the six-digit Kelvin range.

Claim 39 (currently amended): ~~[[A]] The method according to ~~claim 29~~, Claim 29~~;
wherein the plasma is generated with gas pressures selected in the range below 10 Pa.

Claim 40 (currently amended): ~~[[A]] The method according to ~~claim 29~~, Claim 29~~;
wherein the plasma emits radiation with wavelengths shorter than 50 nm.

Claim 41 (currently amended): ~~[[A]] The method according to ~~claim 29~~, Claim 29~~;
wherein the target is chosen from the following materials: xenon, tin, copper, lithium,
oxygen, and iodine.

Claim 42 (currently amended): A device for generating extreme ultraviolet (EUV) or soft
X- ray radiation comprising:

a laser source for producing a laser radiation which is focused to intensities beyond
 10^6W/cm^2 onto a target to produce a plasma; and
~~said~~ electrodes located around the path of the plasma produced by the laser source; ~~and~~
wherein ~~said~~ electrodes ~~being~~ are combined with means for producing a rapid electric
discharge in the plasma with a characteristic time constant which is less than the time
constant of the laser produced plasma expansion time.

Claim 43 (currently amended): ~~[[A]] The device according to ~~claim 42~~, Claim 42~~;
wherein the means for applying electrical energy comprises a pulse compressor.

Claim 44 (currently amended): A device according to ~~claim 42~~, Claim 42;
wherein the means for storing electrical energy comprises a capacity bank.

Claim 45 (currently amended): ~~[[A]] The device according to claim 44,~~ Claim 42;

wherein the electrodes are connected directly to the capacity bank to produce said rapid electric discharge.

Claim 46 (currently amended): ~~[[A]] The device according to claim 44,~~ Claim 42;

wherein the electrodes are connected to the capacity bank through a power on-off switch which is switched on by a logic control element to produce said rapid electric discharge.

Claim 47 (currently amended): ~~[[A]] The device according to claim 42,~~ Claim 42;

wherein the discharge time between the electrodes is between 100 ns and 200 ns, ~~whereas~~ and the laser pulse duration of the laser pulses generated by the laser source is a few nanoseconds and does not exceed 60 ns.

Claim 48 (currently amended): ~~[[A]] The device according to claim~~ Claim 42, further comprising:

a nozzle for injecting a cold jet target, a micro-liquid jet, a droplet spray target, a cluster jet target or an effusive gas target into a joint vacuum chamber equipped by at least one electrically insulating block to hold the electrodes around a laser interaction zone of the target.

Claim 49 (currently amended): ~~[[A]] The device according to claim 48,~~ Claim 42;

wherein the electrically insulating block has a high thermal conductivity.

Claim 50 (currently amended): ~~[[A]] The device according to claim 49,~~ Claim 49;

wherein the electrically insulating block is cryogenically cooled and allows evacuating the ~~head~~ heat load produced by absorption of both unused in-band and out-of-band radiation.

Claim 51 (currently amended): ~~[[A]] The device according to claim 49,~~ Claim 49;

wherein the electrically insulating block also acts as a ~~head~~ heat shield for a cryogenic target injector.

Claim 52 (currently amended): ~~[[A]] The device according to claim 48,~~ Claim 48;

wherein said device further comprises a second vacuum chamber that is connected to the first vacuum chamber via an orifice for receiving the unused target material downstream the EUV light emission zone.

Claim 53 (currently amended): ~~[[A]] The device according to claim 48,~~ Claim 48;

wherein the electrodes are arranged in either a Z-pinch, hollow cathode pinch, star pinch, or capillary discharge configuration.

Claim 54 (currently amended): ~~[[A]] The device according to claim 42,~~ comprising Claim 42;

~~a laser source for producing a laser radiation which is focused to intensities beyond 10^6 W/cm^2 onto a dense target to produce a plasma wherein the target onto which the laser source is focused is a dense target.~~

Claim 55 (currently amended): ~~[[A]] The device according to claim 42,~~ Claim 42;

wherein a laser beam produced by the laser source irradiates a solid bulk, solid foil, liquid, spray, cluster, or effusive gas target to produce a cold plasma plume; and wherein the discharging electrodes are arranged on the path of the plasma plume with the laser interaction zone, the discharging electrodes contributing to heat and compress the plasma for more confined EUV emission.

Claim 56 (currently amended): ~~[[A]]~~ The device according to elaim-Claim 55, further
comprising:

a pulse generator connected to the electrodes that triggers an electrical discharge as the
plasma plume enters the space between the electrodes.

Claim 57 (currently amended): ~~[[A]]~~ The device according to elaim-Claim 42, further
comprising:

discharging electrodes which are arranged next to a jet target to produce a high density
plasma using a conventional discharge configuration of a GDPP on the path of the
plasma~~[[,]]~~;

a laser source which irradiates said plasma in a way which sustains the emission of EUV
radiation~~[[,]]~~; and

a means to trigger the laser pulses when ~~the~~ a pinch process makes the plasma dense enough
to allow additional laser heating.